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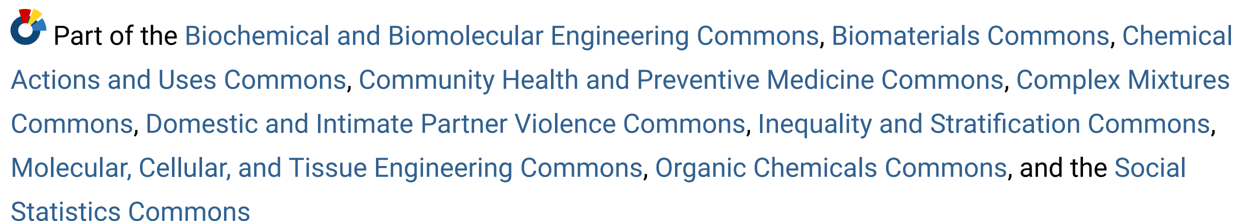

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DRUG-FACILITATED SEXUAL ASSAULT AT THE UNIVERSITY OF ARKANSAS

An investigation into the physical impairments caused by date-rape drugs and suggestions for improving the University's existing sexual assault prevention education and bystander intervention training to reduce instances of drug-facilitated sexual assault on or near campus

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Chemical Engineering Undergraduate Honors Thesis

5/2/2022

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Abstract

This work was written to fulfill two main purposes. First, to help survivors of Drug-Facilitated Sexual Assault (DFSA) process their experience by compiling the toxicological, pharmacological, and distribution of the three most used date-rape drugs. Second, to gauge the knowledge and interest of University of Arkansas students regarding drug impairments, sexual assault education, and bystander intervention training. A survey was conducted for the latter and revealed that 91.6% of students believe the University's existing sexual assault prevention education and bystander intervention training have room for improvement. Also, 37.1% of students who have received this education report that the programming does not go into depth on date-rape drugs.

Introduction

Despite efforts to minimize its occurrences, sexual assault remains a prevalent problem in the United States. According to the National Sexual Violence Resource Center (NSVRC), one in five women experience completed or attempted rape in their lifetime; 79.6% of these women report the assault having occurred before the age of twenty-five.[19] Although universities have made efforts to reduce occurrences of sexual assaults on or near their campuses, such as by providing optional bystander intervention training or risk-management sessions, these rates remain similar from year to year. When considering the landscape of college towns, it is easy to assume why these rates are so high: half of the student population is over 21 years old, making local bars a big part of the social scene. For younger students, going to college is their first time being away from home and out on their own; they are thrown into an unfamiliar environment and pressured to fit in with new peers, which can lead to underage drinking.[17] When it comes to drug-facilitated sexual assault, the most used drug is alcohol; however, cases reported to the Northwest Arkansas Center for Sexual Assault have shown an increase in the usage of date-rape drugs (besides alcohol) in Washington county.[21] Due to the nature of these drugs, it is exceedingly difficult to prove that they have been administered. Victims usually suffer from memory loss after ingesting these drugs and they are metabolized so quickly that it is hard to get positive results even if the victims get a sexual assault forensic exam (or rape kit) and a toxicology test done. Because of this, the number of reported drug-facilitated sexual assaults attributed to these drugs, rather than alcohol, is very low, causing the perception that these occurrences are infrequent.[1]

The purpose of this study is to demonstrate the prevalence of drug-facilitated sexual assault in Northwest Arkansas, specifically in Washington County around the University of Arkansas campus. Regardless of whether cases are increasing, these assaults are occurring, so it is imperative that the existing bystander intervention training and drug-facilitated sexual assault educational programming is further developed. An increased communal knowledge of the physical impairments caused by consumption of these drugs should decrease the number of cases that occur.

To better identify the visible physical impairments, it is helpful to understand the drugs utilized and be familiar with their toxicology. The three most used drugs in cases of drug-facilitated sexual assault, excluding alcohol, are Rohypnol, gamma-hydroxybutyrate (GHB), and ketamine.[1]

Rohypnol

As defined by the U.S. Department of Justice's Drug Enforcement Administration, Rohypnol is a benzodiazepine that falls into the depressant drug category. Rohypnol, also known as Flunitrazepam, is a lipophilic drug that enhances the gamma-aminobutyric acid (GABA) receptors in the brain. They are the neurotransmitters responsible for sending messages throughout the body's central nervous system, as well as the communication between brain cells. GABA exists in the body to inhibit the activity of neurons in response to stimuli, making them a critical actor in the one's behavior and cognition. Benzodiazepines like Rohypnol bind to the same receptors as GABA, mimicking the receptor's calming effects. This is what contributes to the lowered inhibition of one who has ingested a benzodiazepine.[8]

The lack of coordination and loss of motor function can be attributed to the central nervous system sending messages to relax each of the muscles. In some cases, delirium is reported, leading to even greater inhibition loss.

As manufacturers have become more aware of the misusage of the drug, especially in sexual assault cases, they have added a dye to the pill that will turn light-colored drinks blue. However, it is still not difficult to acquire a version of this drug without dye, so this countermeasure is not fully effective. Some internet forums even have the ingredients needed and instructions for making the drug at home, which could account for its wide usage even though it is a Schedule IV controlled substance.[16] This means that it is defined as a drug with a low potential for abuse and low risk of dependence. Because of this, it is important that one can recognize the way the drug affects the body. Rohypnol causes the following impairments: relaxed muscles, droopy eyelids, bloodshot or watery eyes, slurred speech, loss of coordination, confusion, and amnesia. When consumed with alcohol, Rohypnol can exaggerate one's intoxication. The following sections discuss the toxicology, neurobiology, and clinical pharmacology of this drug.

Benzodiazepines contribute to the loss of cerebral cortex function; this part of the brain is responsible for cognition, consciousness, memory, thought, and perception.[18] Once Rohypnol has been ingested, it is metabolized into 7-Aminoflunitrazepam, a toxin that damages the structural integrity of the cells in the cerebral cortex. The amnesic and disinhibitory effects can result in increased high-risk behavior, even when taken in low dosages of 0.5 – 1.0 mg, contributing to its popularity in cases of drug-facilitated sexual assault. Flunitrazepam and its metabolites are also made increasingly toxic in combination with ethyl alcohol.

The chemical name for flunitrazepam is 5-(2-Fluorophenyl)-1,3-dihydro-1-methyl-7-nitro-1,4-benzodiazepin-2-1; it has a molecular formula of C16H12FN3O3.[7] Figure 1 shows the molecular structure.

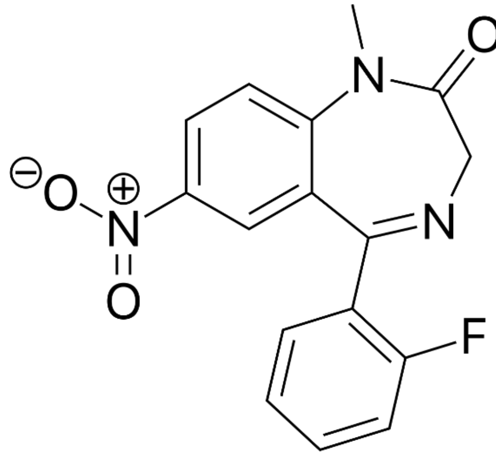

Figure 1. Molecular structure of Flunitrazepam.[6]

The half-life of this drug is 16 to 35 hours, so if predatory DFSA is suspected, a survivor can get a sexual assault evidence kit done within this window and receive positive results for benzodiazepines. The testing done for each of the drugs includes a urine immunoassay and a blood forensic analysis for volatile substances.

Rohypnol is commonly known as the “Roofie” drug; it is the drug most affiliated with drug-facilitated sexual assault. Rohypnol, as a pill, is an oblong olive-green tablet that dissolves easily in water; it also comes in the form of white tablets. Figure 2A is a picture of the olive-colored pill while Figure 2B shows the white-colored tablet. When used by perpetrators, these drugs are normally found as a white, odorless powder.

A *B*

Figure 2. (A) Olive pill form of Rohypnol.[16]

(B) White tablet form of Rohypnol.[15]

GHB

Like Rohypnol, GHB falls into the depressant category and is classified as a hydroxybutyrate. GHB stands for gamma-hydroxybutyric acid; other names for it include G, liquid ecstasy, goop, and scoop. The generic drug name for GHB is sodium oxybate, and the FDA-approved trade name is Xyrem. Xyrem is prescribed to help improve the daytime sleepiness and muscle fatigue associated with insomnia. The drug is commonly misused for its euphoric and calming effects; some even believe that it can help build muscle mass and aid in weight loss.

GHB is a Schedule I controlled substance, meaning that it has a "high potential for abuse, no currently accepted medical use in treatment in the United States, and a lack of accepted safety for use under medical supervision."[10]

The effects of GHB can also be found in analogous substances like GBL, or gamma-butyrolactone, and 1,4-butanediol. These substances metabolize into GHB once consumed. Their legal use is for industrial applications: producing metal and plastic coatings, polyurethane, pesticides, and solvents for laboratory use. Also, in toxicology screenings, these drugs do not show up, so it is difficult to identify their misuse. This is due to how quickly they metabolize.

Unfortunately, GHB is not hard to come by, as it is a popular "rave" drug. It is illegally produced in both domestic and foreign laboratories and spread around by its local creators. GHB and its analogous substances have been found in all regions of the nation. Along with its availability, GHB is also a popular date rape drug because it increases libido, passivity, and amnesia. The analogous substances have similar effects. GHB, like Rohypnol, exaggerates one's intoxication when consumed with alcohol. It can also exaggerate the effects of other depressants when taken in combination. The depressant effects include drowsiness, euphoria, confusion, lowered inhibitions, and loss of memory. These effects occur quickly, within 15 to 30 minutes of consumption, and last for 3 to 6 hours.[10]

GHB can be found naturally in various bodily tissues at trace amounts (0.5 – 1.0 mg/L). This includes the brain where it affects the GABA neurotransmitter. GHB bonds specifically to the GABA-B receptor subtype as a neurotransmitter in the GABAergic system. These cause the same reduced inhibition as Flunitrazepam.

As mentioned earlier, GHB has analogous substances, or precursor drugs, with similar effects on the central nervous system. This is because after ingestion, they are metabolized into GHB – they each have a half-life of about 1 minute. It is hard to estimate the dosages of GHB used, whether recreationally or in the case of drug facilitated sexual assault. While a plasma concentration of 100 mg/L will produce effects like euphoria and disinhibition, a concentration of 500 mg/L is lethal. High dosages of any central nervous system depressant can cause cardiorespiratory depression.[1]

GHB is known in chemical settings as 4-hydroxybutanoic acid and has a chemical formula of C4H8O3. Figure 3 below shows the molecular structure of GHB and its analogous substances in comparison with the GABA they impersonate.

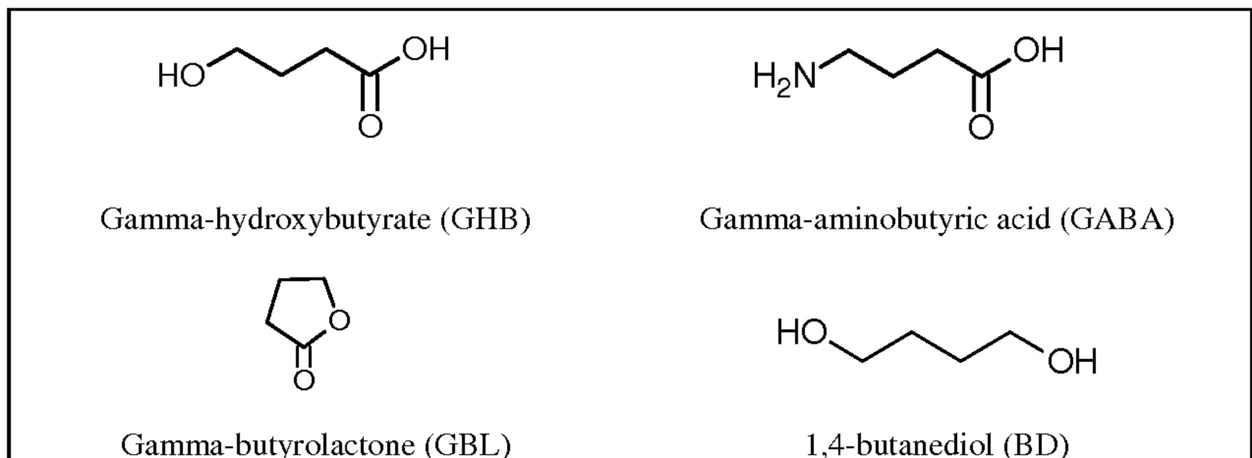

Figure 3. Molecular structures for GHB, GABA, GBL, and BD.[11]

GHB has a half-life of about 30 to 50 minutes, after which it is eliminated from the plasma. The maximum concentration of GHB in the blood occurs between 20- and 40-minutes following ingestion.

The window of detection of GHB in a urine immunoassay is very short; the sample must be collected within 3 to 10 hours. Even then, only about 1 to 5% of the GHB dose can be detected in urine, making it hard to identify misuse.

In person, GHB is found as a white powder that is clear, colorless, and slightly salty in taste when dissolved in a beverage. A GHB solution and powder are shown in Figure 4 below, which comes from a website that claims to sell the substance from $40 to $100.

Figure 4. GHB in solution and powder form.[9]

Ketamine

Ketamine differs from Rohypnol and GHB in that it does not fall into the depressant category; ketamine is a non-barbiturate dissociative anesthetic. This means that it produces hallucinogenic effects such as distorted perception of sight and sound. The most popular street names for ketamine are Special K and Ket. It is also referred to as Vitamin K, Cat Valium, Super Acid, Kit Kat, and Blind Squid.[20]

Ketamine bonds to mu opioid and sigma/phencyclidine receptors.[13] Ketamine also blocks the release of excitatory N-methyl-d-aspartate (NMDA) neurotransmitters in the brain. NMDA receptors belong to the glutamate class of neurotransmitters. Blocking the release of excitatory neurotransmitters slows down the function and firing of neurons in the brain and spinal cord.[3] The NMDA receptors influence cognitive abilities like learning, memory, mood, and behavioral reactions to stimuli. The chemical changes in the brain are not fully understood but are believed to cause ketamine-induced gene expression and signaling cascades.

Ketamine affects the central nervous system just as Rohypnol and GHB do, but its activity is focused in the thalamocortical projection system. Ketamine depresses the cortical and thalamic functions of this system, thus affecting stimulation of the limbic system. The receptors affected are usually found in the hippocampus, amygdala, and prefrontal cortex, which are responsible for attitude regulation.[14]

The symptoms of ketamine consumption are sedation, immobility amnesia, and marked analgesia. At lower doses, and after exiting the amnesia state, it produces a change in mood, body image, and perception. The hallucinogenic effects of ketamine are like those of LSD and PCP, but the duration is only thirty minutes to an hour as opposed to several hours. It also has a quicker onset than these drugs.

The dissociative hallucinogenic effects of ketamine usually last about an hour. The more serious cognitive effects, such as confusion, disorientation, and amnesia, last for several hours. It also causes a reduction in the subjective experience of pain. Higher dosages cause amnesia, lethargy, disorientation, feeling vulnerable, impaired motor coordination, muscle rigidity, sweating, increased heart rate, insomnia, irritability, and increased aggression.[3]

In combination with alcohol, these effects are amplified, just like if Rohypnol or GHB are combined with alcohol. Mixing ketamine and alcohol increases the risk of urinary issues, memory loss, slowed breathing, coma, and even death. An overdose involves unconsciousness, slowed heart rate, vomiting, and clammy skin.[22] Combining ketamine and alcohol is also dangerous due to the potential long-term effects. Cardiovascular issues and liver and brain damage can occur, especially with chronic use.

Ketamine has many legal uses, such as an injectable short-acting anesthetic and as a treatment for treatment-resistant depression. In this cases, dosage and effects are monitored, so it is safe for patients. The illicit abuse of ketamine is dangerous because abusers could overdose or take ketamine cut with other dangerous drugs, like Fentanyl. Mexican distribution organizations are the main supplier of ketamine in the US despite attempts to dismantle them. Other sources are international pharmaceutical drug organizations. With the development of technology, it has become easier to buy illicit drugs, so it is hard to manage the distribution of the drug.[13]

Ketamine is a Schedule III substance according to the Controlled Substances Act, meaning it is accepted for medical use in the United States and has potential for abuse, although lower than Schedule I and II drugs.

Ketamine falls into the cycloalkane derivative category of arylcycloalkylamines. Its chemical name is Ketamine hydrochloride, or 2-(2-chlorophenyl)-2-(methylamino)-cyclohexanone hydrochloride. Ketamine has a half-life of 10 to 15 minutes, so it is effectively eliminated after about 4 to 5 half-lives, or 40 to 75 minutes.

Figure 5 shows the molecular structure of ketamine.

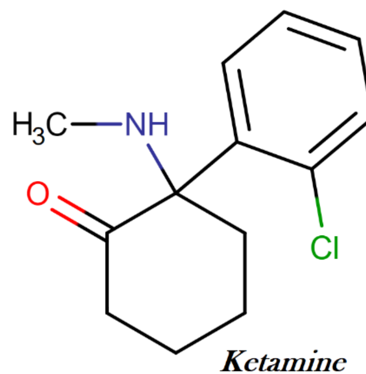

Figure 5. Molecular structure of ketamine.[23]

Ketamine manipulates many receptors in the brain, such as the opiate receptors and those targeted by heroin and cocaine. Its main effect on the brain is on the glutamate system that helps neurons communicate.[23]

The powder dosage is around 100 mg to 200 mg. The powder is consumed by snorting or smoking it, and the liquid is consumed by injection or being mixed into drinks. The powder is most common and is taken in small lines or “bumps.”

After ingestion, ketamine is metabolized into Norketamine, then 5-hydroxynorketamine, and finally 5, 6-dehydronorketamine. The dehydronorketamine is conjugated with glucuronic acid before they are excreted from the urine.[5] The complete biotransformation of ketamine includes N-dealkylation, hydroxylation of the cyclohexone ring, conjugation with glucuronic acid, and dehydration of the hydroxylated metabolites to form the cyclohexene derivative.[12]

To identify ketamine abuse via urine immunoassay, the presence and quantity of its metabolites in the urine are investigated. The limit of detection is 1.9 to 2.1 ng/mL, found from liquid chromatography in tandem with mass spectrometry, indicates ketamine consumption.[5] It is uncommon for unchanged ketamine to be excreted, so it is not a preferred biomarker like its metabolites. It is possible to detect these metabolites within a urine sample for up to 14 days after consumption. Blood analyses are usually not performed for ketamine because it is eliminated from the plasma within 24 hours of administration.

Ketamine comes in the form of a clear liquid or a white/off-white powder. The powder versions are distributed in small glass vials, small plastic bags, paper, glassine, and aluminum folds. It can also come as a nasal spray or in capsules.[20] Figure 6 shows some forms in which ketamine can be found.

Figure 6. (A) Nasal spray form of ketamine.[4] (B) Liquid and powder forms of ketamine.[2]

Study

The goal of the study below is to gain a better understanding of student experiences and knowledge regarding sexual assault education, bystander intervention training, and substance use. Questions are specifically tailored to focus on drugs utilized in drug-facilitated sexual assault. The research questions were: (1) Are the occurrences of sexual assault while in University higher than the national average of sexual assaults? (2) Of drug-facilitated sexual assault? (3) How familiar are students with the effects of drugs like alcohol, marijuana, Rohypnol, GHB, and Ketamine? (4) How familiar are students with the University's policies on sexual assault/rape, and do they think improvement is needed? (5) Does the University's Sexual Assault Education and Bystander Intervention training include adequate education on drug-facilitated sexual assault? (6) Do students feel prepared to intervene when they believe somebody is in danger?

The data from this survey was collected via a Qualtrics survey comprised of University of Arkansas students and recent alumni. This data collection was approved by the campus' Institutional Review Board. The eligibility requirements involved being at least 18 years of age and being a college student or recent graduate. Participation was explicitly stated as voluntary, and respondents faced no penalties for discontinuing the survey at any time. The survey was first opened on Wednesday, March 20th, 2022, and closed on Wednesday, April 13, 2022.

The survey was distributed by the following methods: the Arkansas Newswire, sent to all students and faculty, included the link for the first week of the study; Greek organizations (Pan-Hellenic Council, Interfraternity Council, and National Pan-Hellenic Council) distributed the survey within their chapters; Resident Assistants spread it amongst themselves and with their residents; members of the Razorback Marching Band shared it with their respective instrument sections; and a variety of pre-professional Registered Student Organizations sent the survey to their members. It was also distributed in many classrooms and via social media.

The survey was distributed to 22,653 University students in the Spring 2022 semester, with 261 participants responding to the survey (1.15% response rate). Most of these students identify as female (n = 178, 68.2%), heterosexual (n = 162, 62.1%), and White/Caucasian (n = 211, 80.8%). The average age of these students was 21.5 (SD = 3.1), with the following representation in regard to number of years at the University: first year (14.2%), second year (16.25%), third year (22.1%), or fourth year (30%). The common relationship status for students is single and not actively dating (35.5%), single and actively dating or hooking up (15.1%), or in a committed relationship (39.4%).

Measures

Demographic Self-Identification.

Participants were asked to answer the following questions to better understand respondent demographics: (1) What year are you in college? (2) How old are you? (3) What gender do you identify with? (4) How do you describe your sexual orientation?

(5) How would you describe your race/ethnicity? (6) While at school, where do you currently live? (7) Please mark ALL the organizations you belong to.

Student Alcohol and Drug Consumption.

Since drug-facilitated sexual assault can be either predatory (forcing someone to consume a drug) or opportunistic (taking advantage of someone who consumed drug(s) of their own volition), participants were asked to answer the following questions regarding their alcohol and drug consumption: (1) How often do you consume or drink some kind of beverage containing alcohol? (2) On a day when you consume at least some alcohol, how many drinks do you typically have? (3) Have you ever consumed "street" drugs while attending college? (4) If yes, which drugs? (5) Have you ever been made to consume drugs without your consent?

Students were also presented with a block format question where they indicate, on a scale of one to ten, their familiarity with the following drugs: alcohol, marijuana, Rohypnol or "roofie," GHB, and Ketamine. One indicated no familiarity of the drug's effects, five indicated a moderate idea of the drug's effects, and ten indicated extreme familiarity of the drug's effects. These questions measure a student's ability to identify if they or somebody else are under the influence of these drugs.

Student Experiences of Sexual Assault on or Near Campus.

To understand the prevalence of DFSA and SA on and around the University of Arkansas campus, students were asked the following questions: (1) Have you known someone who has been “roofied” on or near campus? (2) Have you or someone you know ever been sexually assaulted?

If the last question is answered yes, respondents were presented with a block format question asking how many times this has occurred since coming to the University due to the following circumstances: (1) The student was taken advantage of when they were too drunk or out of it to stop what was happening, or (2) The student was made to consume drugs, whether they knew of it or not, that influenced their ability to give informed consent. Then, respondents were asked if alcohol or nonprescription drugs were consumed directly before or during this experience, and by whom were they consumed.

Student Knowledge of University Policies Regarding Sexual Assault and Rape, Sexual Assault Prevention Education, and Bystander Intervention Training.

Participants were asked if they know their University’s policy on sexual assault or rape. If they answered yes, they were then asked the following question: How did you learn about this policy (Check all that apply)? The options for this response include: (1) I researched the information of my own accord. (2) The University required me to do an online training prior to entry. (3) My Registered Student Organization required/encouraged me to do an online training. (4) My Registered Student Organization required/encouraged me to attend University programming regarding this policy. (5) My Residence Hall provided programming regarding this policy.

If the respondents select that they learned about it through a Registered Student Organization, they are then asked which one required/encouraged it. Participants are then asked the same series of logic questions, but instead about Bystander Intervention Training. They are also asked if it was made available and accessible to them. The final question in the Bystander Intervention logic chain is: Did this training include how to go about situations involving alcohol or other drugs?

The responses are: (1) Yes, it included situations with both alcohol and drugs. (2) Yes, but it only included situations with alcohol. (3) No, it did not go into further detail involving alcohol and drugs.

The final questions of this section are: (1) Do you think the University would benefit from additional Sexual Assault Prevention programming and/or Bystander Intervention programming? and (2) Do you feel empowered and equipped with the knowledge and skills to effectively assist in the prevention of sexual violence? There is always more to learn, but please respond based on the knowledge you currently have and to whom you accredit it. The response choices for this question are: (1) Yes, thanks to the training/programming provided by the University. (2) Yes, thanks to my own personal research. (3) Yes, thanks to something else. (4) No.

The goal of this section is to measure students' knowledge of sexual assault prevention and their opinions regarding whether the programming/education provided by the University is sufficient.

Plan of Analysis

Frequency tests were performed to quantify the answer results and display their distributions. A Chi-Square analysis was conducted with the responses to the questions “Have you or someone you know been sexually assaulted?” and “Have you ever been made to consume drugs without your consent?” to demonstrate the statistical significance of their association.

A one-sample T-Test was performed for the block question asking participants to measure their familiarity with the listed drugs, and a 95% confidence interval was used to determine familiarity with each drug on a scale of 0 to 100. For questions following skip logic, response frequency was adjusted to reflect valid and cumulative percentages. This was done for the following questions: (1) Do you feel empowered and equipped with the knowledge and skills to effectively assist in the prevention of sexual violence? (2) Do you know your University’s policy on sexual assault/rape? (3) How did you learn about this policy? (4) Do you think the University would benefit from additional Sexual Assault Prevention programming and/or Bystander Intervention training? and (5) Does the University training include how to handle situations involving alcohol or other drugs?

Results

The first research goal was to determine if occurrences of sexual assault are higher in a University setting than the national average of sexual assaults. According to the Rape, Abuse & Incest National Network (RAINN), college-age women (ages 18 – 24) are at a greater risk of sexual violence. For women of this age in college, they are three times more likely to experience sexual violence; women of this age who are not in college are three times more likely. While in college, 13% of all students (graduate and undergraduate) experience rape or sexual assault through physical force, violence, or incapacitation.[24] Overall, 45.17% (*n = 117*) of the sample reported experiencing some form of sexual assault. Within the same question, 43.30 % (*n = 30*) of respondents reported knowing a victim of sexual assault but have not been assaulted themselves (see *Table 1*)

While response bias plays a role in respondent demographics, these numbers are still high enough to reflect higher rates of sexual assault than the national average of 20%, or one in every five women. Other factors to note are that the 20% national average is for attempted or completed rape, whereas the average retrieved from this sample is for sexual assault (see *Glossary* for difference in definitions).

To determine the relationship between UARK students who have been sexually assaulted and UARK students who have experienced drug-facilitated sexual assault, three Chi-Square tests were performed. The two-sided asymptotic significance of each of these tests were equal to 0.000. Since this is below 0.05, there is a statistically significant association between these two questions.

Then, a cross-tabulation test was performed and included the following results: of respondents who were sexually assaulted, 24.8% (*n* = 64) of them were made to consume drugs without their consent – this is an example of predatory DFSA (see *Glossary*). However, of respondents who were sexually assaulted, 75.2% (*n = 195*) were not made to consume drugs without their consent. Of respondents who were made to consume drugs without their consent, 85.3% (*n = 55*) were sexually assaulted.

The third goal was to analyze student familiarity with common date rape drugs. Because the two-tailed sigma value was 0.000 for each drug on a one-sample test, familiarity for each drug is different from the test value of 50. This scale was changed from 0 – 10 to 0 – 100, with 0 still being not familiar at all and 100 being extremely familiar; 50 was chosen as the test value because it is the center of this range. Any mean that is statistically different from the test value of 50 can represent student familiarity or lack thereof for each drug's effects. Statistically, above 50 represents being familiar with the effects of the drugs.

University of Arkansas student respondents reported being familiar with the effects of alcohol (mean of 89.2) and marijuana (mean of 75.0). The respondents reported little familiarity with the effects of Rohypnol, or "roofie" (mean of 41.5), ketamine (mean of 27.9), and GHB (mean of 15). These responses support the idea that students could benefit from their sexual assault prevention education and bystander intervention training going into greater detail on drug-facilitated sexual assault.

The fourth goal was to analyze student's feelings on whether they feel prepared to intervene as bystanders. If they said yes, they were asked where they attribute that preparation to. Out of 258 respondents, 187 said they felt empowered and equipped to effectively assist in the prevention of sexual violence (72.5%). Of the people who said yes, the majority feel well equipped due to their own research (66.8%). Those who feel well equipped due to University training made up 15.5% of respondents, which is the smallest group for this question. The remaining 17.6% of respondents said they feel well equipped due to something else. Of the students that do feel equipped to intervene, most will not credit it to the University's provided training.

Students who said they know the University's policy on sexual assault and rape were asked where they attribute that preparation to; the following responses are of the students who said they were required/encouraged by their Registered Student Organization (RSO) to do either an online training or to attend University programming. Of the 136 who did report knowing the University's policy on sexual assault and rape, 22.8% know it from personal research, 58.8% know it because the University required them to do training prior to enrollment, 5.9% know it from RSO training, 4.4% know it from information provided by their residence halls, and 8.1% know it from their RSO requiring them to attend University programming regarding the policy.

Finally, the ultimate goal was to see if students believe that the University's Sexual Assault Prevention Education and Bystander Intervention training could be improved upon. Upon being asked this, 91.6% of students ($n = 239$) believe there is room for improvement, while 6.9% ($n = 18$) believe the existing training is fine.

Students who had received training were then asked if the training included how to handle situations involving alcohol or other drugs. This was asked to determine how well the University training covers drug-facilitated sexual assault specifically. Of the 81 respondents who had University training, 63% (n = 51) report that it contained information for both alcohol and drugs; 30.9% ($n = 25$) report that it only contained information regarding alcohol; and 6.2% ($n = 5$) report that the training did not go into further detail involving alcohol or drugs.

Discussion

The goal of this study was to examine student experiences and knowledge regarding sexual assault education, bystander intervention training, and substance use. The limitations to this study are that the sample size was small, and those in the sample displayed response bias because they would be more interested in the survey if they or someone they know had been sexually assaulted.

The results show that the University of Arkansas has a significant amount of sexual assault and drug-facilitated sexual assault occurrences both on and near campus. These results are comparable to national data regarding overall sexual assault in the US and sexual assault that occurs on college campuses. The number of respondents who have experienced drug-facilitated sexual assault reflects that the risk of DFSA is greater than the general perception, especially on college campuses. Most of the respondents who reported being assaulted had not been forced to consume alcohol or other drugs; however, of those who were forced to consume drugs, the majority ended up being assaulted. Many respondents also report having

consumed alcohol or drugs willingly before their assault, which reflects on the prevalence of predatory DFSA (see *Glossary* for definition).

Respondents reported familiarity with alcohol and marijuana, which are common in predatory DFSA, but not with Rohypnol, GHB, or ketamine, which are more common in opportunistic DFSA. Only 30% of respondents who had received University training indicated that it included information regarding drugs, which coincides with the low familiarity of students with date rape drug effects. The majority of respondents (92%) believe that the University could benefit from improving their sexual assault prevention education and bystander intervention training programs.

Of students who feel knowledgeable about sexual assault and bystander intervention, the majority do not accredit this knowledge to University training. The students who do not feel equipped with the knowledge to counter sexual violence could benefit from more comprehensive mandatory University training.

Suggestions

If you suspect that somebody has been impaired by drug consumption and is in danger, here are suggestions for ways to intervene:

- Ask if they can remember things like their address or their birthday. Are they able to understand your questions?
- Ask if they are with friends; do they know their “friend’s” full name? How long have they known this “friend?” If it seems they do not know much about their company, it could be that the person who drugged them has now isolated them from their real friends.
- Alert the workers at this location of your suspicions; bartenders are usually trained to help intervene in situations like these if they know that somebody is in danger.

To improve bartender education regarding drug-facilitated sexual assault, the Inner Truth Project developed “WHAT’S ON TAP,” in which volunteers are recruited and trained to go into bars, speak with bar staff, provide DFSA flyers for each of the restroom stalls, and speak to interested patrons. The Inner Truth Project aims to facilitate an open dialogue amongst bar staffers about what they see in their bars and what they could do to prevent drink spiking and DFSA. Although the program began in Florida, bar staff training and volunteer TAP Team training is available in any area. Becoming TAP Team volunteers would be a great opportunity for Registered Student Organizations to get students involved in actively reducing sexual assault near campus. In Indian River County, Florida, the Sheriff created a program called “What’s On TAP, Safe Bars, Safe Drinks.”

Similar programming can be introduced in Fayetteville if brought to the attention of the right people. Those interested in getting involved should contact Robin Ratermanis at riorater@hotmail.com. (What's on TAP - The Inner Truth Project)

In 2018, prior to enrollment in classes, prospective students had to complete online Title IX training courses and an AlcoholEdu course. The University's contract with the provider of these trainings, however, has expired. As the bidding process has gone on, there has been no requirement for new students to participate in Title IX training, sexual assault prevention training, or bystander intervention training. Since most instances of sexual assault that occur on college campuses occur within the first three months of each semester, it is clear that incoming students need to be made aware of the risks that face them. It is imperative that the University provide accessible sexual assault prevention training, especially for incoming students. As of 5/2/2022, the only training that goes in depth on sexual assault prevention and bystander intervention is on Blackboard and is optional for students. In order to do this training, students must find the course and enroll in it themselves. However, it is difficult to find this course, as it does not show up under the filters of courses provided by the Office of Equal Opportunity and Compliance – only a short course for graduate students is relevant to this issue.

There are many services out there that can provide these trainings contractually through the University. One example is Tightrope, an online risk management program geared towards fostering a safer college experience. Tightrope includes courses such as "The Facts About Alcohol And Drugs" and "Sexual Assault and Misconduct." While Tightrope could go into greater detail on types of drugs and their effects on the body, especially in regard to DFSA, it would be a good starting place for University administration to consider.

These trainings should also be made recurring to students so that they enter each year or semester refreshed on the topics. If students are only required to do it before their first semester, they are likely to forget it after a while. Also, it is likely that the only students who participate in these trainings are those who were interested in the subjects beforehand. Mandatory trainings, whether within residence halls, RSOs, classes, or online, would reach a wider audience and could get the message across to the people who need to hear it – those who would not take the time to research this information on their own.

Since it may be hard to add more trainings to the student curriculum, the University could also investigate incentive programs for students who complete these. For example, within Greek Life, there could be rewards or recognition for the fraternity or sorority who has the most completed trainings. Professors could promote these trainings as extra credit in their classes – even in engineering classes, there have been trainings regarding stereotypes and bias that professors have provided extra credit for. Professors of the general freshman classes, such as the First-Year Engineering Program, the Freshman Business Experience, Honors Humanities Perspectives, University Perspectives, etc. could also incorporate these trainings into their curriculum or provide them as an opportunity for extra credit.

Tables

Have you or someone you know ever been sexually assaulted?

N	Valid	259
	Missing	2
Mean		2.54
Mode		2
Std. Deviation		1.064

Have you or someone you know ever been sexually assaulted?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, I have been sexually assaulted.	31	11.9	12.0	12.0
	Yes, someone I know has been sexually assaulted.	113	43.3	43.6	55.6
	Yes, both myself and somebody I know have been sexually assaulted.	86	33.0	33.2	88.8
	4	2	.8	.8	89.6
	No, I have not been sexually assaulted and don't know anybody who has.	27	10.3	10.4	100.0
	Total	259	99.2	100.0	
Missing	System	2	.8		
Total		261	100.0		

Table 1. Frequency test to find number of UARK students who have been sexually assaulted.

			Have you or someone you know ever been sexually assaulted?				
			Yes, I have been sexually assaulted.	Yes, someone I know has been sexually assaulted.	4	No, I have not been sexually assaulted and don't know anybody who has.	Total
Have you ever been made to consume drugs without your consent?	Yes	Count	29	4	1	0	34
		% within Have you ever been made to consume drugs without your consent?	85.3%	11.8%	2.9%	0.0%	100.0%
		% within Have you or someone you know ever been sexually assaulted?	24.8%	3.5%	50.0%	0.0%	13.1%
	No	Count	88	109	1	27	225
		% within Have you ever been made to consume drugs without your consent?	39.1%	48.4%	0.4%	12.0%	100.0%
		% within Have you or someone you know ever been sexually assaulted?	75.2%	96.5%	50.0%	100.0%	86.9%
Total		Count	117	113	2	27	259
		% within Have you ever been made to consume drugs without your consent?	45.2%	43.6%	0.8%	10.4%	100.0%
		% within Have you or someone you know ever been sexually assaulted?	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2. Frequency test to find number of UARK students who have experienced drug-facilitated sexual assault.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	29.518[a]	3	.000
Likelihood Ratio	33.007	3	.000
Linear-by-Linear Association	12.472	1	.000
N of Valid Cases	259		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is .26.

Table 3. Chi-Square tests to determine statistical significance of the association between UARK students who have been sexually assaulted and UARK students who have experienced drug-facilitated sexual assault.

T-Test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
How familiar are you with the physical effects of the following drugs? - Alcohol	258	89.2016	15.69177	.97693
How familiar are you with the physical effects of the following drugs? Marijuana	253	74.9921	25.88282	1.62724
How familiar are you with the physical effects of the followowing drugs? - Rohypnol, aka "roofie"	212	41.4528	26.97362	1.85256
How familiar are you with the physical effects of the following drugs? - GHB (gamma hydroxybutyrate)	123	14.9593	24.66643	2.22410
How familiar are you with the physical effects of the following drugs? - Ketamine	158	27.8734	30.07310	2.39249

Table 4. T-Test to determine distance from test value of familiarity of UARK students with common date-rape drugs.

One-Sample Test

	Test Value = 50					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
How familiar are you with the physical effects of the following drugs? - Alcohol	40.127	257	.000	39.20155	37.2777	41.1254
How familiar are you with the physical effects of the following drugs? Marijuana	15.359	252	.000	24.99209	21.7874	28.1968
How familiar are you with the physical effects of the followowing drugs? - Rohypnol, aka "roofie"	-4.614	211	.000	-8.54717	-12.1991	-4.8953
How familiar are you with the physical effects of the following drugs? - GHB (gamma hydroxybutyrate)	-15.755	122	.000	-35.04065	-39.4435	-30.6378
How familiar are you with the physical effects of the following drugs? - Ketamine	-9.248	157	.000	-22.12658	-26.8522	-17.4010

Table 5. One-Sample test to determine statistical familiarity of UARK students with common date-rape drugs.

Statistics

Do you feel empowered and equipped with the knowledge and skills to effectively assist in the prevention of sexual violence?

N	Valid	258
	Missing	3
Mean		2.57
Mode		2
Std. Deviation		1.012

Do you feel empowered and equipped with the knowledge and skills to effectively assist in the prevention of sexual violence?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, from training/programming provided by the University.	29	11.1	11.2	11.2
	Yes, from personal research.	125	47.9	48.4	59.7
	Yes, from something else.	33	12.6	12.8	72.5
	No.	71	27.2	27.5	100.0
	Total	258	98.9	100.0	
Missing	System	3	1.1		
Total		261	100.0		

Table 6. Where students attribute their knowledge and abilities to prevent sexual violence if they feel adequately equipped.

How did you learn about this policy? Check all that apply.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I researched the information of my own accord.	31	11.9	22.5	22.5
	The University required me to do an online training prior to enrollment.	80	30.7	58.0	80.4
	My Registered Student Organization required/encouraged me to do an online training.	8	3.1	5.8	86.2
	My Registered Student Organization required/encouraged me to attend Univeristy programming regarding this policy.	11	4.2	8.0	94.2
	My Residence Hall provided programming regarding this policy.	6	2.3	4.3	98.6
	6	2	.8	1.4	100.0
	Total	138	52.9	100.0	
Missing	System	123	47.1		
Total		261	100.0		

Table 7. Where students who are aware of their University's policy regarding sexual assault/rape learned about it.

Do you think the University would benefit from additional Sexual Assault Prevention programming and/or Bystander Intervention programming?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, there is room for improvement.	239	91.6	93.0	93.0
	No, what we have is fine.	18	6.9	7.0	100.0
	Total	257	98.5	100.0	
Missing	System	4	1.5		
Total		261	100.0		

Table 8. Student opinions on whether the University would benefit from additional sexual assault prevention programming and/or bystander intervention programming.

Did this training include how to handle situations involving alcohol or other drugs?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, it included situations with both alcohol and drugs.	51	19.5	63.0	63.0
	Yes, but it only included situations with alcohol.	25	9.6	30.9	93.8
	No, it did not go into further detail involving alcohol or drugs.	5	1.9	6.2	100.0
	Total	81	31.0	100.0	
Missing	System	180	69.0		
Total		261	100.0		

Table 9. Different training topics reported by students who have received University sexual assault education and bystander intervention raining.

References

[1] *Busardò et al. - Drug-Facilitated Sexual Assaults (DFSA) a Serious.Pdf*. https://www.europeanreview.org/wp/wp-content/uploads/10577-10587.pdf. Accessed 15 Apr. 2022.

[2] “Buy Ketamine | The Psychedelics - Where to Ketamine at Low Prices.” *Psychedelics Quid*, https://psychedelicsquid.net/product/buy-ketamine/. Accessed 24 Apr. 2022.

[3] “Dangers of Mixing Ketamine and Alcohol.” *Alcohol.Org*, https://www.alcohol.org/mixing-with/ketamine/. Accessed 24 Apr. 2022.

[4] FDA Approves Form of Ketamine for Depression Treatment. https://www.cbsnews.com/news/ketamine-for-depression-approved-by-fda-today-2019-03-05/. Accessed 24 Apr. 2022.

[5] “Figure 1. Basic Ketamine Metabolic Pathway (23).” *ResearchGate*, https://www.researchgate.net/figure/Basic-ketamine-metabolic-pathway-23_fig1_26716170. Accessed 24 Apr. 2022.

[6] “Flunitrazepam.” *Wikipedia*, 31 Mar. 2022. *Wikipedia*, https://en.wikipedia.org/w/index.php?title=Flunitrazepam&oldid=1080277002.

[7] Flunitrazepam (PIM 021). https://inchem.org/documents/pims/pharm/pim021.htm#SectionTitle:3.2%20%20Chemical%20structure. Accessed 15 Apr. 2022.

[8] "GABA (Gamma-Aminobutyric Acid) - Receptors & Supplements." *EverydayHealth.Com*, https://www.everydayhealth.com/gaba/guide/. Accessed 15 Apr. 2022.

[9] Ghb - Bing Images. https://www.bing.com/images/search?view=detailV2&ccid=F6QJxskp&id=77479153105472769D43B90C99F5D318FBC5F537&thid=OIP.F6QJxskp-zNl7m37U9kncgHaE5&mediaurl=https%3a%2f%2frefindchem.com%2fwp-content%2fuploads%2f2017%2f05%2fcropped-ghb2.jpg&cdnurl=https%3a%2f%2fth.bing.com%2fth%2fid%2fR.17a409c6c929fb3365ee6dfb53d92772%3frik%3dN%252fXF%252bxjT9ZkMuQ%26pid%3dImgRaw%26r%3d0&exph=728&expw=1102&q=ghb&simid=607991288640052042&FORM=IRPRST&ck=BD4DC4434E62EC2C5E0315D5E073D306&selectedIndex=0&ajaxhist=0&ajaxserp=0. Accessed 19 Apr. 2022.

[10] GHB-2020.Pdf. https://www.dea.gov/sites/default/files/2020-06/GHB-2020.pdf. Accessed 25 Apr. 2022.

[11] Jones, A., et al. "Driving under the Influence of Gamma-Hydroxybutyrate (GHB)." *Forensic Science, Medicine, and Pathology*, 2008. *Semantic Scholar*, https://doi.org/10.1007/s12024-008-9040-1.

[12] KETALAR (Ketamine Hydrochloride) Injection. p. 10.

[13] KETAMINE (Street Names Special K, K, Kit Kat, Cat.Pdf. https://www.deadiversion.usdoj.gov/drug_chem_info/ketamine.pdf. Accessed 24 Apr. 2022.

[14] Liu, Guo-Liang, et al. "Ketamine a Dissociative Anesthetic: Neurobiology and Biomolecular Exploration in Depression." *Chemico-Biological Interactions*, vol. 319, Mar. 2020, p. 109006. *PubMed*, https://doi.org/10.1016/j.cbi.2020.109006.

[15] NROHYPNOL.Pdf. https://cnoa.org/documents/NROHYPNOL.pdf. Accessed 15 Apr. 2022.

[16] Rohypnol. https://www.dea.gov/factsheets/rohypnol. Accessed 15 Apr. 2022.

[17] Sexual Assault on College Campuses | Office on Women's Health. https://www.womenshealth.gov/relationships-and-safety/sexual-assault-and-rape/college-sexual-assault. Accessed 15 Apr. 2022.

[18] Sopuluchukwu and Nnabuihe - 2021 - A Study on the Neurotoxicity of Flunitrazepam (Roh.Pdf. https://www.hrpub.org/download/20210430/APP2-17323017.pdf. Accessed 15 Apr. 2022.

[19] "Statistics." *National Sexual Violence Resource Center*, https://www.nsvrc.org/statistics. Accessed 15 Apr. 2022.

[20] Street Names For Ketamine - Addiction Resource. https://www.addictionresource.net/street-names/ketamine/. Accessed 24 Apr. 2022.

[21] *NWA Center for Sexual Assault*, https://www.nwasexualassault.org/. Accessed 24 Apr. 2022.

[22] Wagener, Dan, et al. "Dangers of Mixing Ketamine and Alcohol." *American Addiction Centers*, https://americanaddictioncenters.org/ketamine-abuse/mixing-alcohol. Accessed 24 Apr. 2022.

[23] “What Is Ketamine Drug? Its Street Names, Uses, Mechanism of Action, Abuse, Side Effects, High, Overdose.” *Drugs Details*, https://drugsdetails.com/what-is-ketamine-drug-its-street-names-uses-mechanism-of-action-abuse-side-effects-high-overdose/. Accessed 24 Apr. 2022.

[23] Yin, Hong. “What Ketamine Actually Does to the Brain.” *New Frontiers Psychiatry & TMS | Milwaukee Psychiatrist*, 6 May 2019, https://www.newfrontierspsychiatry.com/what-ketamine-actually-does-to-the-brain/.

[24] “Campus Sexual Violence: Statistics.” *RAINN*, https://www.rainn.org/statistics/campus-sexual-violence.

Appendix

Glossary

1. Drug-facilitated sexual assault (DFSA): any instance of sexual violence that occurs while a victim is under the influence of one or more drugs, including but not limited to alcohol, marijuana, Rohypnol, GHB, or ketamine.
2. Opportunistic DFSA: an instance of DFSA that occurs when a perpetrator takes advantage of somebody who is under the influence of one or more drugs of their own volition.
3. Predatory DFSA: an instance of DFSA that occurs when a perpetrator forces the victim to consume one or more drugs to lower their inhibitions. This includes drink spiking, coercion, or forced consumption.
4. Rape: forcibly engaging in sexual intercourse with a person who has not consented.
    a. Attempted: although not reaching the point of forced contact, the perpetrator had intent to commit and took steps to commit the crime.
    b. Completed: forced penetration of the victim's body; usually physical evidence is needed to support a conviction.
5. Sexual assault: any unwanted sexual contact or attention made through force, threats, bribes, manipulation, pressure, tricks, or violence. All rape is sexual assault, but not all sexual assault is rape.

Survey Components

The questions involved in the survey titled "Studies of College Experiences among UARK Students" are shown below along with the recruitment flyer and consent form provided before launching the survey. The IRB protocol number for this survey is 2202385407 and it was approved on 3/28/2022.

Recruitment Flyer:

Research Study Related to Sexual Assault

Help with research to better understand experiences related to sexual assault and drug use. Prospective participants are invited to take a 10-to-15-minute Qualtrics survey related to demographics, previous experiences of sexual assault, drug-facilitated sexual assault, and bystander intervention. The survey is completely anonymous.

Contacts

Barrett E. Weidman

Ralph E. Martin Department of Chemical Engineering

University of Arkansas

Email: beweidma@uark.edu

Consent Form:

Study of College Experiences among UARK Students

Welcome to the Study!

Thank you for clicking through to our survey. Before deciding whether or not to participate, please read more about the nature of this study.

If I Decide to Participate, What Will be Expected of Me?

This study is open to anyone over the age of 18. Those who decide to participate in this study will be asked to complete an online survey about sexual experiences, drug usage (as it relates to drug-facilitated sexual assault), and participation in Sexual Assault Prevention and Bystander Intervention training. All responses will be completely anonymous. It is possible that some of the questions on the survey carry with them the potential to trigger emotional responses. You are free to decline to answer any questions you do not wish to or stop participating at any time.

In the event you experience negative emotions while participating in this research, and need to reach out for help, please consider the following confidential resources:

· National Helpline: 1-800-662-4357 (HELP)

· Suicide Prevention Lifeline: 1-800-273-8255 (TALK)

· Crisis Text Line: Text “START” to 741-741. This is a free service through most phone service carriers and is available 24/7.

· Crisis Chat: http://www.crisischat.org/ Free chat line available 2 pm to 2 am, seven days/week.

In just a moment, we will ask you to read a study consent form. If after reading this consent form you agree to participate in the study, you will be asked to click through to the survey. This survey should take 10-15 minutes to complete. All information collected will be kept confidential to the extent allowed by law and university policy.

INVITATION TO PARTICIPATE: You are invited to participate in a research study about your sexual experiences, drug knowledge, and participation in Sexual Assault Prevention trainings. You are being asked to participate in this study because you are a college student over the age of 18.

WHAT YOU SHOULD KNOW ABOUT THE RESEARCH STUDY

Who is the Researcher?

Barrett E. Weidman

Ralph E. Martin Department of Chemical Engineering

University of Arkansas

Email: beweidma@uark.edu

What is the purpose of this research study?

The purpose of this study is to better understand college students' existing knowledge of drugs commonly used in drug-facilitated sexual assault and their participation in any sexual assault prevention training and bystander intervention training.

Who will participate in this study? If you participate in this study, you will be one of several hundred individuals participating in the study. You must be at least 18 years old to participate.

What am I being asked to do? Provide thoughtful answers to an online survey. You will not be penalized for ending the survey early.

What are the possible risks or discomforts? There are no anticipated risks to participating in this study. If you feel uncomfortable at any time while completing the survey, you can omit an answer to a question or can terminate your involvement in the study. You will not be penalized for omitting answers or terminating the survey early.

What are the possible benefits of this study? You will be contributing to increasing the body of knowledge about sexual experiences and drug usage on campus; this information will be used to make informed suggestions on how the University's sexual assault prevention training and bystander intervention training can be improved.

How long will the study last? The survey should take approximately 10-15 minutes to complete.

Will I have to pay for anything? No, there will be no cost associated with your participation.

What are the options if I do not want to be in the study? Participation is completely voluntary. If you do not want to be in this study, you may refuse to participate and can close your browser. Also, you may refuse to participate at any time during the study. Your relationship with the investigator will not be affected in any way if you refuse to participate.

How will my confidentiality be protected? All information will be kept confidential to the extent allowed by applicable State and Federal law. Your survey response will be anonymous meaning that no identifying information will be asked during the survey.

What do I do if I have questions about the research study? At the conclusion of the study, you will have the right to request feedback about the results. You may contact Barrett Weidman at beweidma@uark.edu. This study is being done under the supervision of Dr. Heather Walker (hlw@uark.edu). You can keep this form for your files. You may also contact the University of Arkansas Research Compliance office listed below if you have questions about your rights as a participant, or to discuss any concerns about, or problems with the research.

Ro Windwalker, CIP Institutional Review Board Coordinator, Research Compliance, University of Arkansas, 109 MLKG Building Fayetteville, AR 72701-1201, 479-575-2208, irb@uark.edu

Informed Consent I understand the purpose of the study as well as the potential benefits and risks that are involved. I understand that participation is voluntary. I understand that significant new findings developed during this research will be shared with the participant. I understand that no rights have been waived by consenting to participate in this study. I understand that I am allowed to keep this copy of the study information sheet. By filling out the online survey, I am implying my consent to participate in this study.

Survey:

1. What year are you in college?

- First year (1)
- Second year (2)
- Third year (3)
- Fourth year (4)
- Five or more years (8)
- Graduate Student (5)
- Non-degree Student (6)
- Other (7)

2. How old are you (i.e., 19, 21)?

____

3. What gender do you identify with? Note: Cisgender means you identify with the gender you were assigned at birth.

- Cisgender Man (1)
- Cisgender Woman (2)
- Transgender Man (3)
- Transgender Woman (4)
- Nonbinary/Gender nonconforming (5)

4. How do you describe your sexual orientation?

- Straight/Heterosexual (1)
- Bisexual (2)
- Gay/Lesbian (3)
- Asexual (4)
- Not Sure/Questioning (5)
- Other (6)

5. How would you describe your race/ethnicity?

- Black or African American (1)
- American Indian or Native American (2)
- Asian or Pacific Islander (3)
- Latino/Latina (4)
- White or Caucasian (5)
- Arab American (6)
- Other, Please Specify (7) ____
- Multi-racial/Multi-ethnic, Please Describe (8)

  ____

6. While at school, where do you currently live? (Check all that apply)

- College Residence Hall (1)
- Home of Relatives (2)
- Off Campus room, apartment, or house (3)
- Own Home (4)
- Your Parent's Home (5)
- Sorority/Fraternity (6)
- Homeless (7)
- Other (8)

7. Please mark ALL the organizations you belong to:

- Band or musical group, Choir (1)
- Student Government (2)
- Member of a student group (3)
- School Newspaper (4)
- Fraternity/Sorority (5)
- NPHC Fraternity/Sorority (6)
- Student Athlete (7)
- Member recreational sports club/groups (8)
- Social Service or Special Interest Club (9)
- Theater (10)
- Resident Assistant/Peer Educator (11)
- Other, Please Specify (12) ____

8. How often do you consume or drink some kind of beverage containing alcohol (e.g., wine, beer, hard liquor)?

- Every day or nearly every day (1)
- 3 - 4 times a week (2)
- 1 - 2 times a week (3)
- 2 - 3 times a month (4)
- About once a month (5)
- A few times a year (6)
- I do not drink (7)

9. On a day when you consume at least some alcohol, how many drinks do you typically have?

NOTE: 1 drink = 1 can or bottle of beer, or 1 glass of wine/wine cooler mixed drink, or 1 shot of liquor.

- I do not drink (1)
- Less than 1 drink (2)
- 1 - 2 drinks (3)
- 3 - 4 drinks (4)
- 5 - 6 drinks (5)
- 7 to 8 drinks (6)
- 9 or more drinks (7)

10. Have you ever consumed “street” drugs while attending college, such as cocaine, marijuana, stimulants (“uppers”), depressants (“downers”), etc.? This does not include drugs prescribed to you.

- Yes (1)
- No (2)

10a. If you answered yes to the previous question, which drugs have you consumed while attending college that have not been prescribed to you? This also excludes alcohol. Please check all that apply.

- Depressants (e.g., Valium, Prozac, Xanax, Rohypnol, GHB)
- Stimulants (e.g., Cocaine, Crack, Methamphetamine, Adderall, Ritalin)
- Hallucinogens (e.g., LSD (“acid”), MDMA (“ecstasy” or “molly”), Peyote, Psilocybin (“magic mushrooms”))
- Dissociative Anesthetics (e.g., PCP, Ketamine, DXM (cough medicine))
- Narcotic Analgesics (e.g., Heroin, Hydrocodone, Vicodin, Morphine, Oxycontin, Percodan, Methadone)
- Marijuana
- Other drugs not listed

11. Have you ever been made to consume drugs without your consent? This can include being coerced into drinking more or drinking something unknown, not being aware of something added to your drink, or being coerced into taking drugs.

- Yes (1)
- No (2)

12. Have you known someone who has been "roofied" on or near campus?

- Yes. (1)
- I know someone who has been "roofied," but it was not on or near campus. (2)
- No, I do not know anybody who has been "roofied." (3)

13. Do you know your university's policy on sexual assault or rape?

- Yes (1)
- No (2)

If Do you know your university's policy on sexual assault or rape? = Yes

13a. How did you learn about this policy? Check all that apply.

- I researched the information of my own accord. (1)
- The University required me to do an online training prior to entry. (2)
- My Registered Student Organization required/encouraged me to do an online training. (3)
- My Registered Student Organization required/encouraged me to attend University programming regarding this policy. (4)
- My Residence Hall provided programming regarding this policy. (5)

13b. If How did you learn about this policy? Check all that apply = 3 or 4

What type of Registered Student Organization required/encouraged this training? Mark all that apply.

- Band or musical group (1)
- Student Government (2)
- Member of a student group (3)
- School Newspaper (4)
- Fraternity/Sorority (5)
- NPHC Fraternity/Sorority (6)
- Student Athlete (7)
- Member recreational sports club/groups (8)

- Social Service or Special Interest Club (9)
- Theater (10)
- Resident Assistant/Peer Educator (11)
- Other, Please Specify (12) ____

14. Have you been required to participate in any Bystander Intervention Training since starting college? If it was required by multiple entities, please select the one that had the most comprehensive training.

- Yes – it was required by the University. (1)
- Yes – it was required for one of my classes. (2)
- Yes – it was required for my job. (3)
- Yes – it was required for my Registered Student Organization. (4)
- No, I have not been required to participate in Bystander Intervention Training, but it was made available and accessible to me if I wanted to participate. (5)
- No, I have not been required to participate in Bystander Intervention Training and it has not been made available and accessible to me if I wanted to participate. (6)

14a. If Have you been required to participate in any Bystander Intervention Training since starting college? = Yes

Did this training include how to go about situations involving alcohol or other drugs?

- Yes, it included situations with both alcohol and drugs.
- Yes, but it only included situations with alcohol.
- No, it did not go into further detail involving alcohol or drugs.

15. Do you think the University would benefit from additional Sexual Assault Prevention programming and/or Bystander Intervention programming?

- Yes, there is room for improvement. (1)
- No, what we have is fine. (2)

16. Do you feel empowered and equipped with the knowledge and skills to effectively assist in the prevention of sexual violence? There is always more to learn, but please respond based on the knowledge you currently have and to whom you accredit it.

- Yes, thanks to the training/programming provided by the University. (1)
- Yes, thanks to my own personal research. (2)
- Yes, thanks to something else. (3)
- No. (4)

17. How familiar are you with the physical effects of the following drugs?

Consider 0 to be no familiarity on the effects (you have not heard of it or only have a vague idea as to what the drug is), 5 to be somewhat familiar (you have an idea of what physical effects they have), and 10 to be extremely familiar (you know their physical effects and could identify if you or somebody else is experiencing them as a result of consumption):

	0	1	2	3	4	5	6	7	8	9	10
Alcohol (1)											
Marijuana (2)											
Rohypnol, "roofie" (3)											
GHB (4)											
Ketamine (5)											

18. Have you or someone you know ever been sexually assaulted? This includes any action of a sexual nature that occurred without consent. It does not need to be anything violent to count as an assault.

- Yes, I have been sexually assaulted. (1)
- Yes, someone I know has been sexually assaulted. (2)
- Yes, both myself and somebody I know have been sexually assaulted. (3)
- No, I have not been sexually assaulted and don’t know anybody who has. (4)

18a. If Have you or someone you know ever been sexually assaulted? This includes any action of a sexual nature that occurred without consent. It does not need to be anything violent to count as an assault. = Yes (1, 2, or 3)

Show the following question.

The following section contains questions of a sensitive nature regarding nonconsensual sexual experiences.

In which of the following ways has somebody proceeded with sexual actions despite not receiving your consent?

	How many times since coming to the University?			
	0 (1)	1 (2)	2 (3)	3+ (4)
Taking advantage of me when I was too drunk or out of it to stop what was happening. (1)				
Making me consume drugs, whether I know or not, that influence my ability to give informed consent. (i.e., “roofies”) (2)				

18b. Was alcohol consumed directly before or during this experience?

- Yes, by me (1)
- Yes, by the other person (2)
- Yes, by both me and the other person (3)
- No (4)

18c. Were any nonprescription drugs besides alcohol consumed directly before or during this experience?

- Yes, by me (1)
- Yes, by the other person (2)
- Yes, by both me and the other person (3)
- No (4)

Once again, our deepest appreciation.

Your willingness to take the time and effort to complete this survey is very much appreciated. Because we realize that completing this survey may prompt you to remember traumatic events or other disturbing events in your life, you can print this page so that you will have these contact names and numbers if you would like to speak with someone further.

If you would like more information about sexual assault or if you are a victim of sexual assault and need resources, please visit the Rape, Abuse, and Incest National Network's website- rainn.org. If you or someone you know is a victim of sexual assault, you may also contact the national sexual assault hotline at 800-656-6473.